

# Pbx 1a/2/3a (359.15): sc-101856

## BACKGROUND

Pbx 1, 2, 3 and 4 are members of the TALE (three amino acid loop extension) family of homeodomain-containing proteins. Human pre-B cell acute leukemias are frequently associated with a t(1;19)(q23;p13.3) chromosomal rearrangement, which creates a chimeric gene encoding a fusion between the E2A and Pbx 1 gene products. Pbx 2 and Pbx 3 share 92% and 94% respective identities with Pbx 1 over a 266 amino acid region flanking their homeobox domains, while all 3 proteins are quite divergent at their amino- and carboxy-termini. Two forms of Pbx 1 and Pbx 3 each differ primarily in their carboxy-termini and result from alternative mRNA splicing. Unlike other homeotic selector genes which are expressed transiently during development and differentiation, Pbx gene transcripts are ubiquitously expressed in both fetal and adult tissues and cell lines. Additionally, Pbx 2 and Pbx 3 transcripts are detected in lymphoid cells, which do not express Pbx 1. Pbx 4 expression is confined to the testis, especially to spermatocytes in the pachytene stage of the first meiotic prophase.

## REFERENCES

- Nourse, J., et al. 1990. Chromosomal translocation t(1;19) results in synthesis of a homeobox fusion mRNA that codes for a potential chimeric transcription factor. *Cell* 60: 535-545.
- Kamps, M.P., et al. 1990. A new homeobox gene contributes the DNA binding domain of the t(1;19) translocation protein in pre-B ALL. *Cell* 60: 547-555.
- Monica, K., et al. 1991. PBX2 and PBX3, new homeobox genes with extensive homology to the human proto-oncogene Pbx 1. *Mol. Cell. Biol.* 11: 6149-6157.
- Lu, Q., et al. 1994. Fusion with E2A converts the Pbx 1 homeodomain protein into a constitutive transcriptional activator in human leukemias carrying the t(1;19) translocation. *Mol. Cell. Biol.* 14: 3938-3948.
- Monica, K., et al. 1994. Transformation properties of the E2A-Pbx 1 chimeric oncoprotein: fusion with E2A is essential, but the Pbx 1 homeodomain is dispensable. *Mol. Cell. Biol.* 14: 8304-8314.

## SOURCE

Pbx 1a/2/3a (359.15) is a mouse monoclonal antibody raised against a recombinant protein corresponding to amino acids 319-430 of Pbx 1a of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## APPLICATIONS

Pbx 1a/2/3a (359.15) is recommended for detection of Pbx 1a, Pbx 2 and Pbx 3a of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of Pbx 1a: 47 kDa.

Molecular Weight of Pbx 2: 46 kDa.

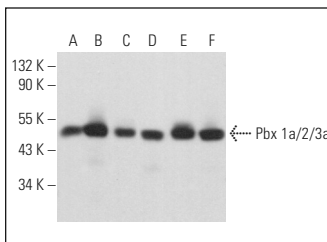
Molecular Weight of Pbx 3a: 47 kDa.

Positive Controls: Pbx 3 (h): 293T Lysate: sc-111640, KNRK whole cell lysate: sc-2214 or BJAB whole cell lysate: sc-2207.

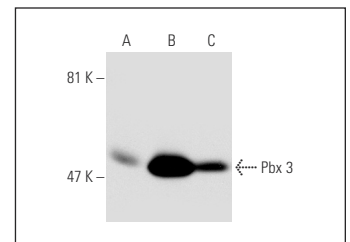
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



Pbx 1a/2/3a (359.15): sc-101856. Western blot analysis of Pbx 1a/2/3a expression in BJAB (A), KNRK (B), A-673 (C), Jurkat (D), HeLa (E) and MOLT-4 (F) whole cell lysates.



Pbx 1a/2/3a (359.15): sc-101856. Western blot analysis of Pbx 3 expression in non-transfected 293T: sc-117752 (A), human Pbx 3 transfected 293T: sc-111640 (B) and BJAB (C) whole cell lysates.

## SELECT PRODUCT CITATIONS

- Ando, H., et al. 2014. Peptide-based inhibition of the HOXA9/PBX interaction retards the growth of human meningioma. *Cancer Chemother. Pharmacol.* 73: 53-60.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.